

ROBERTSON, S. I., SAROKIN, V. I., LITVAKOV, N. N., and IVANOV, R. V.

"Application of Radioactive Isotopes to the Study of Processes of Photosynthesis and Chemosynthesis and Chemosynthesis in Lakes," a paper presented at the Atoms for Peace Conference, Geneva, Switzerland, 1955

SOROKIN, V. I., Cand of Phys-Math Sci -- (diss) "Investigation of acoustic water-air resonators." Moscow, 1957, 14 pp Acoustics Institute, Academy of Sciences USSR), 100 copies (KL, 35-57, 105)

Sorokin, V.I.

46-3-8/15

AUTHOR: Sorokin, V.I.

TITLE: On the Splashing Out of Drops from the Surface of a Vertically Vibrating Liquid (Ob effekte fontanirovaniya kapel' s poverkhnosti vertikal'no koleblyushcheysya zhidkosti)

PERIODICAL: Akusticheskiy Zhurnal, 1957, Vol.III, Nr 3, pp.262-273 (USSR)

ABSTRACT: Installing water-air radiators, i.e., vessels filled with air and immersed in water so that there is a free air-water boundary within the neck of the vessel, the author discovered the existence of major vibrational energy losses in such systems. These losses cannot be explained by the known mechanism of dissipation of energy in resonators. It turned out that these energy losses were due to the splashing out of drops from the air-water interface into the air cavity. This new mechanism of dissipation of energy was investigated by studying the behaviour of a free water surface executing vertical vibrations. When the amplitude of these vibrations is sufficiently large one observes the emission of drops of water to a considerable height. The drops break away from the crests of the waves which appear on the surface. Details of this phenomenon are considered in the

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On the Splashing Out of Drops from the Surface of a Vertically Vibrating Liquid.

successive stages up to and including the appearance of the phenomenon of emission of drops from a vibrating surface. Quantitative characteristics of this phenomenon are summarised in 5 graphs and a theoretical description of it is given. There are 12 figures, no tables and 3 references, 2 of which are Russian (translations from English) and 1 is English.

ASSOCIATION: Institute of Acoustics, Academy of Sciences, USSR, Moscow (Akusticheskiy institut, AN SSSR, Moskva)

SUBMITTED: April 13, 1957.

AVAILABLE: Library of Congress.

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Sc 1000 1A, 1-1.

AUTHOR: Sorokin, V.I.

46-4-2-12/20

TITLE: Investigation of Water—Air Resonators (Issledovaniye vodno-vozdushnykh rezonatorov)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol IV, Nr 2, pp 187-195 (USSR)

ABSTRACT: By an air—water resonator (Fig 1) the author understands a vessel filled with air which has either an open end, a neck, or a diaphragm across the open end and is immersed in water. Such a system due to the large effective (attached) mass and compressibility of the air space, has small geometrical dimensions for low natural frequencies. At low frequencies the vessel dimensions are considerably smaller than the acoustic wavelength and we can regard the resonator as a system with "concentrated" parameters. The present paper deals with low-frequency water—air resonators with a free boundary surface between air and water. Calculations of the natural frequency, attached mass and radiation impedance of such a resonator may be carried out by the usual methods. At high-intensity external fields, however, increased energy losses are observed which cannot be explained by the known energy-loss mechanisms. A new form of energy dissipation is suggested. This dissipation is due to a fountain effect with ejection of drops from the boundary water—air at the resonator neck.

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Such a fountain effect was observed stroboscopically. A numerical estimate is obtained for this new form of energy losses by introduction of a frictional force which varies as the square of velocity. The coefficient of non-linear losses was determined experimentally as follows. The author used cylindrical resonators immersed in water. The general scheme of the apparatus used is shown in Fig 3. A transparent cylinder 2 was fixed to the diaphragm of an electrodynamic vibrator 1. The vibrator was supplied by a generator 3 through a low-frequency amplifier 4. A cylindrical resonator 5 (made of steel beam. This beam was held horizontal by supports which were independent of the rest of the apparatus. Resonator 5 had an internal diameter of 8.0 cm and its height was 12 cm. A piezoelectric receiver of Rochelle salt was mounted inside the resonator. The electrical signal from the piezoelectric receiver, passed through an amplifier 6 and was recorded on a moving film at a string oscillograph 7. Using another acoustic receiver 8, acoustic pressure in the hermetically sealed volume 9 (under the vibrator diaphragm) was also recorded on the same film. This latter measurement was necessary to check the effect of the water—air resonator on the dynamics of the vibrator. The experimental results which give the

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Investigation of Water—Air Resonators

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coefficient of non-linear losses are shown in Figs. 8-10 for resonators with natural frequencies of 28, 37 and 41 c/s. In these graphs continuous lines show theoretical curves which are the nearest approximations to the experimental points represented by circles. From the coefficient of non-linear losses the Q-value of the resonator can be obtained. The authors thank V.S. Grigor'yev who directed this work. There are 11 figures and 10 references, 4 of which are Soviet, 4 American, 1 German and 1 translation of a Western work into Russian.

ASSOCIATION: Akusticheskiy Institut AN SSSR, Moskva (Acoustics Institute, Academy of Sciences of the USSR, Moscow)

SUBMITTED: May 6, 1957

Card 3/3 1. Resonators—Characteristics 2. Resonators—Operation 3. Resonators—Mathematical analysis

SCROKIN, V. I.: Master Geolog-Mineralo Sci (diss) -- "The geological features of the upper Zgidskiy polymetallic deposit". Moscow, 1958. 16 pp (Min Higher Educ USSR, Moscow Inst of Nonferrous Metals and Gold im M. I. Kalinin), 170 copies (KL, No 6, 1959, 128)

SOROKIN, V.I.

Certain structural features and main stages of mineralization of the principal vein of Verkhniy Zgid deposits. Izv. vys. ucheb. zav.; tsvet. met. no.1:13-20 '58. (MIRA 11:6)

1. Severokavkazskiy gornometallurgicheskiy institut. Kafedra poleznykh iskopayemykh i poiskovo-razvedochnogo dela.
(Verkhniy Zgid---Geology, Structural)

18.0000

75400
SOV/149-2-5-26/32

AUTHORS: Starikov, V. N., Sorokin, V. I.

TITLE: First Caucasian Interuniversity Conference of Students-Geologists

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Tsvetnaya metallurgiya, 1959, Vol 2, Nr 5, pp 175-179 (USSR)

ABSTRACT: From April 16 to 19, 1959, the above conference took place at the North Caucasian Mining Metallurgical Institute, Ordzhonikidze, at which student societies of a number of universities and institutes participated. The conference was opened by a paper by student Kachurin, V. (SKGMI is the North Caucasian Mining Metallurgical Institute): "Concerning Aims of Soviet Geology in the Spirit of Decisions by the XXI Congress of the Communist Party of the Soviet Union." There followed 20 papers by students from Ordzhonikidze, Baku, Groznyy, Dnepropetrovsk, Kiev, Novocherkassk, Moscow, Rostov, Kharkov. Zubov, V. (Dnepropetrovsk) submitted a paper on "Scheelite-Bearing Skarns in one of the North Caucasian Deposits." Yushin,

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Yu. (Groznyy) read a paper on "An Improved Device for Determination of Magnetic Properties of Rocks - the 'Penetrometer'". A paper by Bochek, L. (Moscow), "Gas Content of Copper Pyrite Deposits in the Center of Northern Caucasus," was given. Mel'nikova, T. (Groznyy) presented a paper on "Bituminous Limestone of Northern Osetia." Drozdov, V., Miroshnichenko, A., and Stativkin, E. (Novocherkassk) presented a paper on "Structure and Origins of a Copper Pyrite of Central Caucasus." Independent work carried out by Kondakov, L., and Kondakova, S. (Ordzhonikidze) was the subject of a paper: "Microstructural Analysis of Surrounding Rocks as a Method of Determination of the Origin of Buronsk Cassiterite-Pyrite Deposit in Northern Osetian ASSR." Grigorovich, B. (Kiev) submitted a paper on "Mineral Waters of Kermadon." Konovalova, B. (Ordzhonikidze) submitted the results of a study under the direction of Mansurovskiy, A. P., and Kryazhev, G. S.: "Geological Structure and Methods of Study of a Caucasian Ore Deposit at the Sadonsk-Uman Anticlinal Fold." Potapov, V.

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(Ordzhonikidze) submitted a paper on "Structure of Kholstin Polymetallic Deposit." This work was carried out under the direction of Docent Baklakov, M. S. The following papers were submitted: Kirillova, G., and Yegorova, E. (Rostov): "Micropaleontological Character of the Upper Foraminiferic Formation in River Belaya Area in Northern Caucasus"; Dubrovinskiy, R. (Ordzhonikidze): "Application of Absorption Spectroscopy to Mineralogy of Cleiophane in the Verkhne-Zgidskiy Deposit"; Mirzoyeva, F. (Baku): "Hydrothermally Modified Rocks of Azerbeydzhan SSR"; Lebed'ko, G. (Rostov on Don): "Petrographic Peculiarities of the Baryta Zone Near Karabek in Northern Caucasus"; Buniat-Zade Zia Aliogly (Baku): "Diapirism in South-Eastern Caucasus"; Berger, M., (Kharkov): "Petrography and Origins of Kiya-Shaltyrsk Urtite Deposits"; Denisenko, V. (Dnepropetrovsk): "Stratigraphy of Jurassic Deposits at Karachayevsk"; Kianits, A., Kovalenko, A.: "New Data on Geology, Magmatism and Metal Origins of Northern Caucasus"; Efendiyev, E. (Baku): "Useful Minerals of Azerbeydzhan

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First Caucasian Interuniversity Conference
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SSR"; Shinkarenko, V. (Novocherkassk): "Permatites of Kaibsk Granite Mountain Range, Their Origin and Classification." The North Caucasian Geological Administration and the trust "Sevkavkazsvetmetrazvedka" (North Caucasian Prospecting of Nonferrous Metals) participated in the work of the conference. The next conference will take place in Baku in 1960.

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SOROKIN, V.I.

Chalcopyrite-bornite ores in volcanic sedimentary rocks of the
Berkara Mountain region (eastern Kazakhstan). Vest.Mosk.un.Ser.
4: Geol. 17 no.2:28-36 Mr-Apr '62. (MIRA 15:5)

1. Kafedra poleznykh iskopayemykh Moskovskogo un^{iv}ersiteta.
(Berkara Mountain region--Chalcopyrite)
(Berkara Mountain region--Bornite)

SOROKIN, V.I.; SHORYGIN, V.A.

Association of sulfides of the chalcocite-bornite-chalco-
pyrite-pyrrothite (pyrite) series under hydrothermal con-
ditions. Geokhimiia no.6:590-602 Je '63. (MIRA 16:8)

ACC NR: AP6029061

SOURCE CODE: UR/0413/66/000/014/0100/0100

INVENTOR: Vlasenko, V. I.; Oshchepkov, P. K.; Sorokin, V. I.

ORG: None

TITLE: A magnetic internal inspection unit for long parts. Class 42, No. 183999 [announced by the Scientific Research Institute of Internal Inspection (Nauchno-issledovatel'skiy institut introskopii)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 100

TOPIC TAGS: metal inspection, magnetic method, pipe

ABSTRACT: This Author's Certificate introduces: 1. A magnetic internal inspection unit for checking long parts, e. g. pipes, bars, etc. The device produces a two-dimensional image in the form of isolines of the magnetic fields surrounding the part when it is magnetized by any method. The installation contains a group of magnetic field intensity pickups, an open register, electronic switches controlled by the register for alternate connection of the pickups to a common busbar, an integrator which isolates the envelope of the series of amplitude-modulated pulses formed on the busbar, a line-scanning sawtooth voltage generator, a frame-scanning stepped voltage generator, a cathode ray tube with image persistence, and magnetic heads for recording and reading out magnetic marks in each cycle. The device is designed to

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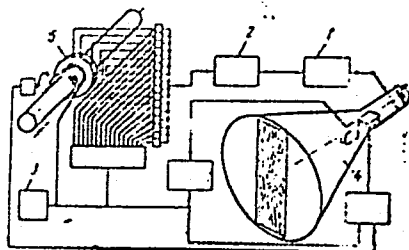
UDC: 620.179.143

ACC NR: AP6029061

produce a quantitative visual representation of the magnetic field intensity in iso-lines by using a multiple-level amplitude discriminator with input connected to the integrator and output connected to the control electrode of the cathode ray tube. This discriminator puts out a train of identical-amplitude pulses separated by time intervals which repeat the real-time moments when the pulse amplitude reaches the envelope of the given potential levels which is determined in the integrator. 2. A modification of this inspection unit in which the image scale is maintained regardless of the rate of motion of the article being checked. Incorporated in the installation is a marking device which contains a stable-frequency pulse generator. The pulses from this generator are recorded in the form of marks on the surface of the moving article. The pulses read out from these marks serve as the control signal for selection of the intervals in stepped frame scanning which move the beam along the frame in the cathode ray tube in inverse proportion to the magnitude of the interval. 3. A modification of this inspection unit which handles articles of any profile by assembling the pickups into a unit which holds them stationary along the perimeter of the article, repeating its profile.

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ACC NR: AP6029061



1--discriminator; 2--integrator; 3--pulse generator; 4--cathode ray tube; 5--pickup unit

SUB CODE: 13,200/ SUBM DATE: 30Jan65

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SOROKIN, V.I., nauchnyy sotrudnik

Alloplasty in congenital fissures of the upper lip. Trudy Nauch.-
issl.inst.stom. no.10:51-55 '62. (MIRA 15:10)
(SURGERY, PLASTIC) (HARELIP)

SOECKIN, V.K.

SOECKIN, V. K.: "Investigation of stamping, sintering, and hot working of metaloceramic piston rings". Gor'kiy, 1955. Min Higher Education USSR. Gor'kiy Polytechnic Inst imeni A. A; Zhdanov, Chair of Metallography. (Dissertations for the degree of Candidate of Technical Science.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow.

SOROKIN V.K.

Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies E-5

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6651

Author : Aksenov, G.I., Sorokin, V.K.

Inst : Gor'kiy Polytechnic Institute, USSR

Title : Study of Certain Laws of Dispersion Hardening of Metal-Ceramic Alloys of Iron-Copper-Carbon

Orig Pub : Poroshkovaya metallurgiya, Yaroslavl', 1956, 71-77

Abstract : A greater increase in hardness has been observed in Fe-Cu-C metal-ceramic alloys than in compact copper steel, and more time is required here to reach maximum hardness. As the porosity of the specimens increases, the growth in hardness slows down, and the maximum value of hardness increment increases. Increasing the copper content reduces the rate of strengthening, a fact most noticeable at high temperature. Additional pressing of the sintered specimens causes a rapid increase in hardness during the first hours of soaking.

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Sorokin, V.K.

USSR / Diffusion. Sintering.

E-6

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9346

Author : Akse nov, G.I., Sorokin, V.K.

Inst : Gor'kiy Polytechnic Institute, USSR

Title : On the Structure of Metal-Ceramic Alloys of Iron-Carbon-Copper

Orig Pub : Poroshkovaya Metallurgiya, Yaroslavl', 1956, 79-82

Abstract : It is shown that the change in the thermal conditions of the carbonization sintering makes it possible to obtain austenite with varying concentrations of carbon. In carbonization sintering of pressed specimens made of an iron-copper charge there occurs predominantly diffusion of carbon along the boundaries of the metal grains. Addition of copper to the charge prevents the diffusion of carbon from the boundaries inside the grain of the metal.

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S/137/60/000/03/04/013

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No 3, p 103,

5300

18.6200

AUTHOR:

Sorokin, V.K.

TITLE:

Preparation of Parts From Iron Powder

PERIODICAL:

Za tekhn. progress (Sovnarkhoz Gor'kovsk. ekon. ad. r-na),
1959, No 2, pp 16 - 18

TEXT:

The author investigated the process of manufacturing parts from Fe-Cu-alloys, obtained by sintering with the aid of carburizing. Sintering was carried out in boxes with charcoal. It was established that the basic effect on carburizing process was exerted by the temperature and the porosity of the pressed briquets. If the sintering temperature was raised from 900° to 1,120°C and holding time was 90 minutes at the sintering temperature, the C content in the carburized layer increased from 0.60% to 0.90%. Sintering at 1,060°C ensured the formation of a carburized layer of 0.4 - 0.5 mm thickness with a perlitic structure; at 1,120°C the carburizing spreads over the whole thickness of the specimen (5 mm). At a sintering temperature of 1,000°C and holding of 30 to 60 minutes, an increase in the

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Preparation of Parts From Iron Powder

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porosity from 13 to 23% deepens slightly the carburized layer; if porosity is $> 28\%$ the depth of the layer increases sharply. This is explained by the fact that at a low density of the briquets an increase in density by higher pressure in pressing takes place through the impression of particles into large pores; the surface of the particles does not decrease and the pores remain open. High pressure in pressing does not only reduce the general porosity but also the percentage of open pores. It is recommended to carry out sintering at $1,060 - 1,120^{\circ}\text{C}$ with subsequent rapid cooling. The suggested technology ensures a series of advantages: the possibility of using a conventional furnace equipment without shielding atmosphere, the production of perlitic structure of the carburized layer, the preparation of more durable and wear-resistant specimens.

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Card 2/2

BAKHCHISARAYTS'YAN, N.G.; SOROKIN, V.K.

Electrochemical passivation of zinc coatings. Report No.1. Trudy
MKHTI no.26:139-145 '59. (MIRA 13:9)
(Zinc) (Passivation)

BAKHCHISARAYTS'YAN, N.G.; SOROKIN, V.K.; SHEBUKHOVA, L.A.

Formation of black protective films on zinc in the course of its
anodic treatment in chromate solutions. Trudy MKHTI no.26:151-155
'59. (MIRA 13:9)

(Zinc) (Chromates) (Films (Chemistry))

SOROKIN, V.K.

Increase of porosity in the process of sintering iron-copper mixtures. Izv.vys.ucheb.zav.; chern.met. 2 no.8:101-103 Ag '59. (MIRA 13:4)

1. Gor'kovskiy politekhnicheskiy institut. Rekomendovano kafedroy metallovedeniya i termoobrabotki Gor'kovskogo politekhnicheskogo instituta.
(Powder metallurgy)

S/113/60/000/010/012/014
D270/D301

AUTHOR: Sorokin, V.K., Candidate of Technical Sciences

TITLE: Sintered carbide piston rings

PERIODICAL: Avtomobil'naya promyshlennost', no. 10, 1960, 38 - 39

TEXT: Powder metallurgy is the most promising method of producing lasting piston rings. Experimental research by TSNIITMash, NIITA-vtoprom, the Gor'kovskiy avtomobil'nyy zavod (Gor'kiy Automobile Plant), Gor'kovskiy politekhnicheskii institut (Gor'kiy Polytechnic Institute) is quoted. According to I. Belak (Ref. 4: Mashinostroyeniye, referativny zhurnal, no. 8, 1957) and A.S. Sarvina (Ref. 5: Avtomobil'naya promyshlennost', no. 3, 1959) large-scale production of these rings for car engines was organized in 1956 in Czechoslovakia from a base of "AM" to 4MTY (ChMTU) 3648-53 iron powder manufactured by the Sulinskiy Metallurgical Plant. Higher strength is secured by the addition of 1.5 - 3 % of copper powder. Pressing of the rings is carried out in a tool shown in Fig. 1 under a pressure of 6 - 7 tons/cm² from a hydraulic press. Rings are sintered at

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Sintered carbide piston rings

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D270/D301

1100 - 1120° for 50 - 60 minutes, followed by calibration and heat treatment of the gap. Sintered carbide rings are not machined and do not have deposits (not plated). Normally they have a perlitic structure with a content of ferrite not exceeding 5 %, and their relative density is 84 - 86 %. These rings were tested in GAZ-51 and GAZ-M20 engines on a run of 36,800 - 59,000 km. The mechanical properties of rings were determined in accordance with OCT 7295-54 (GOST-7295-54). They proved to have better strength characteristics than cast iron rings and possessed lesser residual deformations. The relatively low hardness of the rings was due to their porosity. Measurements of microhardness of both sintered carbide and cast iron rings gave the same results. The sintered carbide rings can operate with high stresses without risk of breakage, due to their low ratio between the modulus of elasticity and ultimate strength. Preliminary operational tests reveal that these components ensure normal engine operation during a run of 60,000 km and are thus equal of chromium plated rings. The first compression ring in the GAZ-51 engine had a lower life, whereas the second ring a similar life to that of standard rings. The results of investigation and

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Sintered carbide piston rings

S/113/60/000/010/012/014
D270/D301

the three year practice of Czechoslovak manufacturers demonstrate that they have a future in automobile engines. There are 4 figures 2 tables and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows I.A. Judd, Automobile Engineering, v. 24, no. 453, 1944; "Steel", v. 136, no. 4, 1955, 82 - 84; "Precision method moulding", v. 12, no. 2, 1954, 35 - 37, 78 - 81.

ASSOCIATION: Gor'kovskiy politekhnicheskii institut (Gor'kiy Polytechnical Institute)

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S/129/60/000/012/009/013

E073/E535

Influence of Copper and Graphite on the Properties of Iron Base Powder

17.5 to 20%. The UTS, the elongation and hardness were determined, the latter by means of a Brinell tester using a 10 mm ball loaded with 500 kg. Fig.1 shows the UTS (σ_b , kg/mm²) and the hardness (HB, kg/mm²) as a function of the copper content (0 to 16%) in the charge (1.2% graphite content, sintering at 1150°C). The UTS (continuous line) curves show two characteristic sections. With increasing copper content to 1.5% the strength increases sharply, by about 50%. A further increase in the copper content to 15% leads only to very slow increases in strength. Thus, for 1.5 and 15% copper the strength values are respectively 29 and 33 kg/mm². The elongation drops only slightly on increasing the copper content to 1.5%; an appreciable drop was only observed for larger copper additions. For copper contents of the charge of 0, 0.5, 1.5, 5, 7, 10 and 15% the elongations were, respectively, 3, 2.96, 2.92, 1.92, 1.56, 0.88 and 1.56%. The hardness shows the greatest increase for copper additions up to 5%. On increasing the copper content further, the hardness will increase more slowly. The specimens

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Influence of Copper and Graphite on the Properties of Iron Base Powder

were found to have a pearlitic structure or a structure of pearlite with small quantities of ferrite. Structurally free copper was observed only in specimens with 10 to 15% Cu in the charge; the copper was distributed in the form of inclusions along the boundaries of the round pearlite grains. The influence of the graphite content in the charge on the UTS and the hardness (7% Cu, sintering for 60 min at 1150°C) is plotted in Fig.2. The strength increases with increasing graphite content up to 1.5%. A further increase in the graphite content reduces the strength. Specimens with 3.5% graphite content in the charge had a strength which was lower than that of graphite-free specimens. The hardness increased with the graphite content in the charge up to 1.5% and then decreased with increasing graphite content. Specimens with a graphite content below 1.2% had a ferritic-pearlitic structure. Specimens with a graphite content of 1.2% had a pearlitic structure and specimens with 1.5% graphite had a pearlitic structure with a thin discontinuous network of cementite along the grain boundaries.

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S/129/60/000/012/009/013
E073/E535

Influence of Copper and Graphite on the Properties of Iron Base Powder

Specimens which were made of charges containing 3.5% graphite had a structure of coarse granular pearlite with an extensive network of cementite along the boundaries and graphite inclusions. The following conclusions are arrived at: 1) For increasing the UTS of sintered iron base alloys with a pearlitic structure by 50%, it is sufficient to introduce 1.5% Cu into the charge, thereby the relative elongation will drop only slightly. 2) The highest strength was observed for specimens made of a charge containing 1.2 to 1.5% graphite; after sintering these alloys showed a structure of pearlite or pearlite with small quantities of cementite. There are 2 figures and 2 Soviet references.

[Abstractor's Note: This is a slightly abridged translation. The meaning of "1" and "2" in Fig.1 is not explained but it seems to refer to the sintering times which are not given.]

ASSOCIATION: Gor'kovskiy politekhnicheskiy institut (Gor'kiy Polytechnical Institute)

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TIKHONOV, G.F.; SOROKIN, V.K.; KHROMOV, V.G.

Rolling highly-porous strips for filters of titanium powder. Trudy
LPI no.222:71-72 '63. (MIRA 16:7)
(Powder metallurgy) (Rolling (Metalwork))

ACCESSION NR: AR4018312

8/0137/64/000/001/G035/G036

SOURCE: RZh. Metallurgiya, Abs. 10247

AUTHOR: Tikhonov, G. F.; Sorokin, V. K.

TITLE: Study of the sintering of stainless steel

CITED SOURCE: Tr. Kuybyshsk. aviats. in-t, vy*p. 16, 1963, 135-140

TOPIC TAGS: stainless steel sintering, titanium steel sintering, steel powder sintering

TRANSLATION: Specimens in the form of a strip (density, 40-45%) prepared by rolling powder of stainless austenitic steel containing various amounts of C and Ti and obtained by the method of joint reduction were sintered at 1200, 1250, and 1300° for 6 hr in very dry H₂. Satisfactory strength was obtained at a sintering temperature of 1250-1300°. Specimens containing excess Ti (0.39-0.64%) had an oxidized surface covered with brown oxides and no ductility. Sintering for 15 hr did not remove the oxides. Specimens containing excess Ti in the amount of 0.15% were weakly oxidized and sintering for 15 hr removed the oxides. Specimens without Ti did not oxidize during sintering. It is apparent that the oxidation of the stainless steel powder

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ACCESSION NR: AR4018312

during sintering is caused by the presence of free Ti which did not enter into the γ -solution in the course of producing an alloyed powder. To prevent the oxidation of the stainless steel, it is necessary to use powders without Ti, or with a calculated ratio of C to Ti. In order to improve the sintering capability of stainless steel, the authors added Cu (1-3%). The introduction of 2-3% Cu increased strength from 11.6-11.9 to 13.0-14.8 kg/cm². V. Miroshnikov

SUB CODE: MM

ENCL: 00

Card

SOROKIN, V.K., kand.tekhn.nauk; ISKHAKOV, B.S., inzh.

Investigating structure formation during the sintering of iron-graphite alloys. Trudy GPI 19 no. 1:60-68 '63. (MIRA 17:7)

SOROKIN, V.K., kand. tekhn. nauk

Changes in density during the sintering of iron-copper powder
alloys. Trudy GPI 19 no. 1:74-77 '63. (MIRA 17:7)

BRADIS, A.V., starshiy prepodavatel'; MALINOVSKIY, V.S., dotsent; SOROKIN,
V.K., starshiy laborant

Content of the trace elements copper, molybdenum, manganese,
cobalt, zinc and silver in wild and cultivated plants of Kalinin
Province. Report No.1. Trudy KGMI no.10:19-23 '63.

(MIRA 18:1)

1. Iz kafedry fiziki (zav. kafedroy starshiy prepodavatel' A.V.
Bradis) i kafedry obshchey khimii (zav. kafedroy dotsent V.S.
Malinovskiy) Kalininskogo gosudarstvennogo meditsinskogo instituta.

L 2728-66 EWT(1)/EWT(m)/EWP(1)/I/EWP(t)/EWP(b)/EWA(h) LJP(c) JD/AT
 ACCESSION NR: AP5017176 44,55 44,55 UR/0139/65/000/003/0048/0052

AUTHOR: Palatnik, L. S.; Sorokin, V. K. 21,44,55 46 43 7

TITLE: Preparation of PbTe semiconductor films by the method of variable-composition samples

SOURCE: IVUZ. Fizika, no. 3, 1965, 48-52

TOPIC TAGS: lead compound, telluride, semiconducting film, thermoelectric power, resistivity

ABSTRACT: The method used for the condensation of PbTe was originally proposed by S. A. Vekshinskiy (Novyy metod metallograficheskogo issledovaniya splavov [New Method of Metallographic Investigation of Alloys], Gostekhizdat, 1944). It consists of sublimating the film from PbTe vapor which contains a small amount (1%) of free tellurium. The produced films contained sections with stoichiometric component ratio, sections with variable concentration of the excess Pb and Te, and a linear pn junction. The authors describe the details of the process and the results of measurements of the thermoelectric potential difference and the specific resistivity of the PbTe-Pb films prepared by this method. The resistivity of the films was 40--50 ohm-cm and the differential thermal emf reached 1,000 $\mu\text{V}/\text{degC}$. An important role in the control of the properties is exerted by the adsorption of oxygen during

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L 2728-66

ACCESSION NR: AP5017176

the preparation of the semiconducting film. At pressures on the order of 10^{-2} mm Hg and above, the resistivity decreases and the thermal emf increases. In some cases the largest thermal emf is obtained at atmospheric pressure, so that PbTe films can possibly be used for the development of thermoelectric pickups operating at atmospheric pressure. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Khar'kovskiy politekhnicheskij institut imeni V. I. Lenina (Khar'kov Polytechnic Institute)

SUBMITTED: 29 Nov 63

NR REF SOV: 006

ENCL: 00

OTHER: 004

SUB CODE: 88

Card 2/2

SOROKIN, V.K.

Investigating the compressibility of metal powders of various
dispersity. Porosh. met. 5 no.8:6-11. Ag. '65. (MIRA 18:9)

1. Gor'kovskiy politekhnicheskii institut.

L 2291-66 EWT(1)/EWT(m)/EWP(1)/ETC/ENG(m)/T/EWP(t)/EWP(b) IJP(c) RDW/JD/GG
ACCESSION NR: AP5014568

UR/0181/65/007/006/1699/1705

AUTHOR: Palatnik, L. S.; Sorokin, V. K.; Lebedeva, M. V.
44,55 44,55 44,55

TITLE: On the influence of the substrate on the structure and properties
of PbTe films
27 27

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1699-1705

TOPIC TAGS: thin film growing, epitaxial growing, lead compound, telluride,
single crystal
21 44,55 44,55 4

ABSTRACT: The authors investigate the influence temperature and of the real structure of the surface of a NaCl substrate, used for oriented growing of PbTe single-crystal film, on the structure and the properties of the film. The films were prepared by an epitaxial growth technique on a plate of rock salt fastened to an annular copper strip, across which a temperature drop 50--3500 was produced. The PbTe was evaporated in a vacuum of 5×10^{-4} mm Hg. A series of samples, differing from one another only in the substrate temperature, were tested in a single experiment. The effect of the perfection

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ACCESSION NR: AP5014568

3

of the NaCl surface was also studied. The results indicate that two types of condensation nuclei are produced, one distributed uniformly over the entire surface of the substrate and the other located near the jogs on the relief of the surface. At high temperatures, the crystal layers of PbTe serve as continuations of the jogs of the NaCl, whereas at medium temperatures the crystal formation along the jogs competes with the crystal formation uniformly distributed over the entire surface of the substrate. The competition between these mechanisms, occurring at 180--2200, hinders the oriented growth of the films with large single-crystal fragments and reduces the mobility of the carriers in the film. It is concluded that if the substrates are chosen with a small number of jogs or other defects on the surface, and are protected against moisture, then very good single-crystal films can be grown even at 140--1600. The carrier mobility in such films increases by a factor 2--3, at 140--1600 and by 30--50% at 250--3000 and reaches the same value as in bulk material at 3000. Orig. art. has 7 figures and 1 table.

ASSOCIATION: Khar'kovskiy politekhnicheskii institut im. V. Lenina
(Khar'kov polytechnic institute)

SUBMITTED: 18Dec64

NR REF SOV: 004

Card

2/2 DP

44,55

ENCL: 00

OTHER: 002

SUB CODE: 88, 1A

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

Preparation of semi-conducting films of PbSe by the method of specimens
of the film composition, Inv. No. 108-52 '65.
(MIRA 18:9)

1. Khar'kovskiy politekhnicheskii institut im. V.I. Lenina.

L 20318-66 EWT(m)/EPF(n)-2/EWA(d)/EWP(t) IJP(c) JD/WA/2G
ACCESSION NR: AP5020765 UR/0226/65/000/008/0006/0011

AUTHOR: Sorokin, V. K.

TITLE: Study of the pressibility of metal powders of different particle sizes

SOURCE: Poroshkovaya metallurgiya, no. 8, 1965, 6-11

TOPIC TAGS: powder metal compaction, iron powder, stainless steel, titanium, powder metal molding, powder metallurgy, metal particle size/Kh18N15 stainless steel

ABSTRACT: Test materials were powders of reduced iron, Kh18N15 stainless steel, and titanium of the following chemical composition (in %)-iron: 0.23 carbon, 0.35 manganese, 0.18 silicon, 0.01 sulfur, 0.017 phosphorous; stainless steel: 0.02 carbon, 15.79 chromium, 13.72 nickel, 0.37 manganese, 0.19 silicon, 0.011 sulfur, 0.011 phosphorous; titanium: 0.17 iron, 0.08 silicon, 0.045 carbon, 0.053 nitrogen, 0.081 calcium. Depending on particle size, the bulk weight (grams/cm³) varied from 2.16 to 2.21 for iron, 1.19 to 1.93 for stainless steel, and 0.8 to 1.30 for titanium, and the relative density (%) from 27.5 to 28.2 for iron, 15.2 to 24.6 for stainless steel, and 17.7 to 28.8 for titanium. Packing Card 1/2

L 20318-66

ACCESSION NR: AP5020765

properties were determined by pressing powders into briquettes in a hydraulic press under pressure of 98.1, 196.2, 392.4, 588.6, 784.8, and 981 Mn/m². Relative density was determined by weighing and measuring the briquettes. Moldability of the powders was determined by two methods: 1) from the strength of the briquettes in bending, compression, elongation, and "drum tests"; 2) from the magnitude of the minimum pressing pressure at which the edges of the briquette break off; and 3) from the density (porosity) of the briquette. Depending on particle size, the relative density at a pressing pressure of 981 Mn/m² varied (%) from 85.0 to 86.0 for iron, 84.3 to 81.0 for stainless steel, and 89.2 to 87.9 for titanium. The molding coefficient varied from 27.6 to 11.9 for stainless steel and 31.9 to 16.4 for titanium. The author suggests use of the ratio of the maximum porosity of the briquette to the minimum pressing pressure as a criterion of the moldability of a powder. Orig. art. has: 1 figure and 3 tables

ASSOCIATION: Gor'kovskiy politekhnicheskiy institut (Gorki Polytechnic Institute)
SUBMITTED: 13Apr65 ENCL: 00 SUB CODE: MM
NR REF SOV: 004 OTHER: 000

Card 2/2

BK

L 05484-57 EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AP6028296 (A) SOURCE CODE: UR/0363/66/002/006/0997/1000

AUTHOR: Palatnik, L. S.; Sorokin, V. K.

ORG: Scientific Research Institute of Basic Chemistry, Kharkov (Nauchno-issledovatel'skiy institut osnovnoy khimii)

TITLE: Effect of substrate on the concentration and sign of current carriers in PbTe films

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 6, 1966, 997-1000

TOPIC TAGS: lead compound, telluride, semiconducting film, semiconductor carrier

ABSTRACT: Polycrystalline and single-crystal PbTe condensates 2-5 μ thick were obtained on glass, NaCl, and KCl, and the sign of the current carriers and their concentration in these films were studied as functions of the conditions of oriented growth and structure formed. It was found that in PbTe films containing a 0.5 wt. % excess of tellurium, p-type conductivity is retained up to 250°C and above. An anomalously high electron concentration indicating an enrichment of the film with the metallic component appears only in a narrow temperature range at 270-300°C. The relationship between this effect and the change in the type of formation of nuclei and also the change from oriented to unoriented growth was demonstrated. The anomalously high enrichment of the film with the metallic component (lead) is the result of decomposition (fractionation) of the film material during the intense mass transfer over the sub-

UDC: 537.311.33:539.216.2

Card 1/2

L 26504-66 EWT(1)/EWT(m)/ETC(f)/EWG(m)/T/EWP(t)/ETI IJP(c) RDW/GG/JD

ACC NR: AP6012466

SOURCE CODE: UR/0181/66/008/004/1088/1090

AUTHOR: Palatnik, L. S.; Sorokin, V. K.

ORG: Khar'kov Polytechnic Institute im. V. I. Lenin (Khar'kovskiy politekhnicheskii institut)

TITLE: On oriented growing of lead selenide and telluride films

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1088-1090

TOPIC TAGS: lead compound, selenide, telluride, epitaxial growing, temperature dependence, thin film growing, vapor condensation, electric conductivity, Hall effect

ABSTRACT: This is a continuation of earlier work (FTT v. 7, 1699, 1965) where it was found that in the temperature interval 180 - 300C it is difficult to grow thin epitaxial films of PbTe on NaCl, in spite of the fact that growth at lower (140 - 180C) and higher (300 - 400C) temperatures is possible. To investigate this phenomenon further, and to determine the influence of the type of substrate (NaCl, KCl) and the condensation rate, the authors investigated the influence of the preparation temperature and the rate of condensation on the carrier mobility in PbSe and PbTe films 1 - 5 μ thick. The PbSe and PbTe condensates were prepared in a vacuum $\sim 5 \times 10^{-4}$ Torr on freshly cleaved single crystals of NaCl and KCl. A special geometry was used to check on the effect of the preparation temperature, as described in the earlier paper. The carrier mobility was determined by measuring the Hall effect and the conductivity. The results show that substitution of KCl for NaCl shifts the entire plot

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L 26504-66

ACC NR: AP6012466

of the temperature corresponding to minimum mobility vs. the condensation rate toward higher temperatures. In the case of PbSe the temperature of the minimum increases practically linearly with the condensation rate, while for PbTe the relation is parabolic. An empirical relation between this temperature and the condensation rate is derived. The results confirm a hypothesis advanced in the earlier paper that at the temperature of minimum mobility a change takes place in the manner of formation of condensation nuclei. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 16Aug65/ ORIG REF: 006/ OTH REF: 001

Card 2/2 CC.

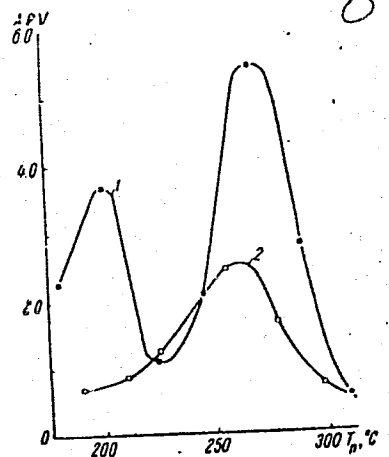
L 06201-01 LWP(M)/EWP(L)/ETI LJP(C) JD
 ACC NR: AP6030980 SOURCE CODE: UR/0181/66/008/009/2795/2796
 AUTHOR: Palatnik, L. S.; Sorokin, V. K. 50
 ORG: Kharkov Polytechnic Institute im. V. I. Lenin (Khar'kovskiy politekhnicheskii institut) 13
 TITLE: Effect of substrate on the photoemf in CdTe films 21 21 13
 SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2795-2796
 TOPIC TAGS: photo emf, cadmium telluride, aluminum oxide

ABSTRACT: The article reports preliminary data on the effect of single-crystal leucosapphire (Al_2O_3) substrate on the anomalously high photovoltage (APV) in CdTe films. Fig. 1 shows the dependence of APV on the temperature and type of substrate. The single-crystal leucosapphire substrate with axis c in the plane of the leucosapphire plate substantially affects APV in CdTe. The absolute value of the photoemf in the CdTe film deposited on Al_2O_3 is 3-5 times greater than in the film on glass. The effect of the single-crystal substrate is particularly manifest in the 150-200°C range. In the temperature range where the preparation is carried out and where the epitaxial growth of CdTe on Al_2O_3 determines the optimum size of blocks and the phase composition, a photoeffect is observed that considerably exceeds the APV which can be obtained under the same conditions on a glass substrate. Orig. art. has: 1 figure.

Card 1/2

L. 06261-67
ACC NR: AP6030980

Fig. 1. Dependence of APV on temperature of substrate. 1 - CdTe on Al_2O_3 ; 2 - CdTe on glass.



SUB CODE: 20/ SUBM DATE: 02Apr66/ ORIG REF: 003/ OTH REF: 002

Card 2/2 *esr*

ACC NR: AP6036408

SOURCE CODE: UR/0148/66/060/011/0127/0128

AUTHOR: Sorokin, V. K.

ORG: Gorki Polytechnic Institute (Gor'kovskiy politekhnicheskiy institut)

TITLE: Effect of small copper additions on the sintering of stainless steel

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1966, 127-128

TOPIC TAGS: stainless steel, chromium nickel steel, sintered stainless steel, copper containing sintered steel, sintered steel property, powder metal sintering, metal physical property, copper, chromium steel, nickel steel / OKh18N15 stainless steel

ABSTRACT: The mixtures of OKh18N15 stainless steel powder (0.02% C, 15.79% Cr, 13.72% Ni, 0.37% Mn) with 0.8, 1.6, 2.4, 3.2% copper powder were compacted to a density of 2.94—3.06 g/cm³ or 5.15—5.54 g/cm³ and sintered in dry hydrogen at 1280C for 0.5, 1, 2, or 4 hr. Copper addition increased the shrinkage during sintering from 0.3—0.6%, for specimens without copper to 2.4—2.9% for specimens with 1.6% copper and 2.2—2.5% for specimens with 3.2% copper (slight decrease). The relative increase of shrinkage with time follows the same pattern in compacts at both densities and depends only on copper content. No significant shrinkage was observed in copper-free specimens during the first two hours of sintering, while in specimens with 3.2% copper the shrinkage was about 2.4%. The tensile strength of strip rolled to a density of 5.5 g/cm³ from powder containing 3.2% copper was 14 kg/mm² compared to 11.6 kg/mm² for strip rolled from copper-free powder. Thus,

UDC: 669.018.8.046.44

Card 1/2

ACC NR: AP6036408

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001652510014-6"

the addition of 3.2% copper to stainless steel intensifies the sintering and increases the tensile strength of sintered material. Orig. art. has: 2 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 04Jul63/ ORIG REF: 001/

Card 2/2

ACC NR: AP6036893 (w) SOURCE CODE: UR/0226/66/000/011/0009/0013

AUTHOR: Tikhonov, G. F.; Pyryalov, L. A.; Sorokin, V. K.

ORG: Gor'kiy Polytechnic Institute im. A. A. Zhdanov (Gor'kovskiy politekhnicheskii institut)

TITLE: Selection of powders for obtaining present properties of porous materials and pressings

SOURCE: Poroshkovaya metallurgiya, no. 11, 1966, 9-13

TOPIC TAGS: metal powder, porosity, filtration, particle size

ABSTRACT: An experimental analysis was made of the correlation between the porosity, particle size, fineness of filtration filtering and the permeability factor of porous materials. A new formula is derived for determining the permeability factor at a given porosity and particle size of the material. Experimental data are presented for the fineness of filtration. One table showing the correlation of the fineness of filtration with the powder particle size and the powder fraction with fineness of filtration are given. Orig. art. has: 3 formulas and 5 tables. [Based on authors' abstract] [NT]

Card 1/1 SUB CODE: 11/SUBM DATE: 20Oct66/ORIG REF: 008/

SOROKIN, Vasilii Kuzlaich; BOLOTSKAYA, Ye.I., redaktor; GORYUNOVA, L.K.,
redaktor izdatel'stva; KARASIK, N.P., tekhnicheskii redaktor

[Practice of the Lezha lumbering comp] Opyt raboty lezhskogo
lespromkhoza. Moskva, Goslesbumizdat, 1957. 36 p. (MLRA 10:10)
(Vologda Province--Lumbering)

SOROKIN, V.M. (Tashkent)

Measurement of blood oxygen during surgery of the thyroid gland
[with summary in English]. Probl.endok. i gorm. 4 no.2:101-106
Mr-Ap '58 (MIRA 11:5)

1. Iz kafedry gosspital'noy khirurgii lechebnogo fakul'teta
(zav. - prof. S.A. Masumov) Tashkentskogo gosudarstvennogo
meditsinskogo instituta (dir. - dotsent A.G. Gulamov)
(THYROID GLAND, surgery
eff. on blood oxygen levels, determ. (Rus))
(OXYGEN, in blood
determ. during surg. on thyroid gland (Rus))

TURAKULOV, Yu.Kh.; NIKOLAYEV, A.I.; SOROKIN, V.M.

Intensity of the inclusion of methionine- S^{35} in proteins of
rats in hypo- and hyperthyroidism. Izv.AN Uz.SSR.S.r.med.
no.6:37-39 '58. (MIRA 12:5)

1. Laboratoriya biokhimii, Institut krayevoy meditsiny. UzSSR
i Tashkentskiy farmatsevticheskiy institut.
(METHIONINE) (THYROID GLAND--DISEASES) (PROTEINS)

SOROKIN, V.M.; IOFFE, K.G.

A method for quantitative fractionation of labelled compounds in a simple test of a tissue preparation. Izv. AN Uz. SSR. Ser. med. no.2: 33-36 '59. (MIRA 12:7)

1. Institut krayevoy meditsiny AN UzSSR. Tashkentskiy gosudarstvennyy meditsinskiy institut.
(PHOSPHORUS--ANALYSIS) (HISTOCHEMISTRY)

TURAKULOV, Ya.Kh.; SOROKIN, V.M.; ISLAMBEKOV, R.K.

Localization of protein-bound I^{131} and the nature of iodized components
in the thyroid gland at different intervals following the injections of
radioiodine. Izv. AN Uz.SSR. Ser.med. no.4:47-52 '59. (MIRA 12:12)

1. Institut krayevoy meditsiny AN UzSSR.
(IODINE--ISOTOPES) (THYROID GLAND--RADIOGRAPHY)

SOROKIN, V. M. (USSR)

"Effects of Therapeutic Doses of Stable Iodine and of Methylthiouracil
on the Relation between the Iodine Compounds isolated from the Human
Thyroid."

Report presented at the 5th International Biochemistry Congress,
Moscow, 10-16 Aug 1961

SOROKIN, V.M.

Effect of therapeutic doses of stable iodine and methyl thiouracil on
the synthesis of iodized amino acids in the thyroid gland. Trudy Inst.
kraev. eksper. med. no.3:112-117 '61. (MIRA 15:5)

(URACIL) (IODINE--PHYSIOLOGICAL EFFECT)
(AMINO ACIDS) (THYROID GLAND)

SOROKIN, V.M.

Mechanism of the action of iodide on the formation of hormones
in the thyroid gland. Trudy Inst. kraev. eksper. med. no.4:
55-61'62. (MIRA 16:6)

(IODIDES)

(THYROID HORMONES)

SOROKIN, V.M.

Hydrolysis of elastin diluted with alkali and basic copper sulfate. K. G. Ioffe and V. M. Sorokin (V. M. Molotov Med. Inst., Tashkent). *Biochim. Zh.* 19, 652-5 (1954).
Five g. air-dried elastin and 2.5 g. basic copper sulfate were suspended in 100 ml. 0.4N Ba(OH)₂, placed in the incubator, and automatically stirred for 48 hrs.; thereafter hydrolysis proceeded without stirring. At intervals of 24, 40, 60, 64, and 72 hrs. samples were taken for analysis. Twenty ml. was neutralized with AcOH forming a ppt. (fraction A), and a filtrate (fraction B). Further fractionation was accomplished as described. N detns. were made by the Kjeldahl method. Another series of somewhat similar expts. was performed in which total N, amino N, and P₂O₅ detns. were made. The results of the hydrolysis are large polypeptides. Low-mol. hydrolytic products are few. Two types of fractions (A₁ and B) are distinguishable from one another by their properties and constitution. Each fraction represents a mixt. of polypeptides of similar properties. The higher-mol. fraction (A₁) gives rise to fractions A₁ and B.
B. S. Levine

1. SOROKIN, V.M.
2. USSR (600)
4. Champagne (Wine) - Kazakhstan
7. Achievements of the Champagne Combine of Kazakhstan, Vin.SSSR 13 no. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

SOROKIN, V.M.

Suggestions for young electric locomotive engineers. Elek. i tepl.
tiaga 2 no.3:22-24 Mr '58. (MIRA 11:4)

1. Starshiy mashinist elektrovoza, depo Pererwa, Moskovsko-Kursko-
Donbasskaya doroga.

(Electric locomotives)

PODCHESOV, E.N.; STROYNOV, K.I.Y., V.V.; VSTAVSKIY, L.I.; KURASOV, D.A.;
CHUMAKOV, V.N.; S'ROKIN, V.M., inzh., retsenzent; MAKSIMOV,
N.V., kand. tekhn. nauk, red.; VOROB'YEVA, L.V., tekhn.red.

[Maintenance and repair of ChS2 and ChS3 electric locomotives;
work practices in the "Oktyabr'" repair shop of the Southern
Railroad] Obsluzhivanie i remont elektrovozov CHS3; opyt kol-
lektiva depo "Oktyabr'" IUzhnoi zheleznoi dorogi. Moskva,
Transport, 1964. 99 p. (MIRA 17:4)

SOROKIN, Viktor Nikiforovich; GRIGOR'YEV, A.I., redaktor; ANDRIANOV, B.I.,
tekhnicheskiy redaktor

[Know how to find your way] Umei orientirovat'sia. Moskva, Izd-vo
DOSAAF, 1955. 58 p. (MIRA 9:3)
(Orientation (Topography))

GOSPODINOV, G.V.; ZHUKOV, N.G.; MALAKHOVA, G.A.; SOROKIN, V.N.

[Handbook of practical assignments in surveying] Rukovodstvo
k prakticheskim zaniatiyam po geodezii; kameral'nye raboty.
Moskva, Mosk. gos.univ. im. M.V.Lomonosova, 1962. 118 p.
(MIRA 15:11)

(Cartography) (Surveying)

BEZGINOV, I.P., professor-prepodavatel', polkovnik;; VELUGO, V.M., professor-prepodavatel', polkovnik;; GERASIMOV, A.I., professor-polkovnik, polkovnik;; LEBEDEV, A.I., professor-prepodavatel', polkovnik;; MILYUTENKOV, D.M., professor-prepodavatel', polkovnik;; PROKHORKOV, I.I., professor-prepodavatel', polkovnik;; SEKACHEV, V.I., professor-prepodavatel', polkovnik;; SOROKIN, V.N., professor-prepodavatel', polkovnik;; UKHOV, N.E., professor-prepodavatel', polkovnik;; FEDOTOV, B.I., professor-prepodavatel', polkovnik;; SHIRYAKIN, M.V., professor-prepodavatel', polkovnik;; SHMELEV, M.S., professor-prepodavatel', polkovnik;; ANISIMOV, N.I., professor-prepodavatel', polkovnik;; BULATOV, A.A., professor-prepodavatel', podpolkovnik;; SIDORENKO, A.A., professor-prepodavatel', podpolkovnik;; SHKODUNOVICH, N.N., general-leutenant, glavnyy red.; BANNIKOV, M.K., polkovnik, red.; DAVYDOV, F.M., polkovnik, red.; LOZOVY-SHEVCHENKO, V.M., general-mayor, aviatsii, red.; SHIPOVA, B.V., polkovnik, red.; MOROZOV, B.N., polkovnik, red.; VOLKOVA, V.E., tekhn. red.

[Concise dictionary of operational-tactical and general military terms] Kratkii slovar' operativno-takticheskikh i obshchevoennykh slov (terminov). Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 323 p. (MIRA 11:11)

1. Moscow. Voenennaya akademiya imeni M.V.Frunze. 2. Krasnoznamennaya, ordena Lenina i ordena Suvorova 1-y stepeni Voenennaya akademiya imeni M.V.Frunze (for all except Shkodunovich, Bannikov, Davydov, Lozovoy-Shevchenko, Shipova, Morozov, Volkova).
(Military art and science--Dictionaries)

SOROKIN, V.N.

Daily operation of our hospital. Voen.-med.zhur. no.12:69-71 D '58.
(MIRA 12:12)

(HOSPITALS, MILITARY)

SKIBA, I.F., kand.tekhn.nauk; SOROKIN, V.N.

New principles of car inspection. Zhel. dor transp. 43 no. 1:28-35
Ja '61. (MIRA 14:4)

1. Nachal'nik vagonnoy sluzhby Kuybyshevskoy dorogi (for Sorokin).
(Railroads---Cars)

ACC NR: EWA(k)/FBD/ENT(1)/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h) SGTB/IJP(c) W
AP6000193

AUTHOR: Andreyeva, T. L.; Dudkin, V. A.; Malyshov, V. I.; Mikhaylov, O. V. 44
Sorokin, V. N.; Novikova, L. A. 44
ORR: Physich Institute im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy
Institut Akademii nauk SSSR) 44

TITLE: Photodissociation laser 25, 44 73 B

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 5, 1965,
1408-1410 44

TOPIC TAGS: laser, gaseous state laser, photodissociation

ABSTRACT: The authors investigated the dependence of the oscillation threshold and the pulsed energy output of a photodissociation laser based on CH_3I or CF_3I (recently fabricated by J. V. V. Kasper and G. C. Pimental [Applied physics letters, v. 5, no. 11, 1964, p. 231]) on the pressure of the gaseous CH_3I or CF_3I . In the first series of experiments, the authors used a 50-cm-long argon-filled flash tube with a 50- μf capacitor bank (voltage 2-10 kw). A 60-cm-long quartz tube with a 7-mm inner diameter equipped with Brewster-angle windows was used as the laser tube. The flash tube and the adjacent laser tube were wrapped in aluminum foil. A confocal cavity formed by two concave gold-surfaced mirrors (radius 1 m) was used in the experiments. The output energy of the CF_3I laser pulse was observed to reach a peak at a pressure

Card 1/2

KODOLOV, V.D., inzh.; SOROKIN, V.N., inzh.

Welding aluminum alloys with a consumable electrode in a
mixture of argon with chlorine. Svar. proizv. no.12:16-19
D '62. (MIRA 15:12)
(Aluminum alloys--Welding) (Protective atmospheres)

L 31505-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6013017

SOURCE CODE: UR/0051/66/020/004/0554/0560

AUTHOR: Dudkin, V. A.; Malyshev, V. I.; Sorokin, V. N.

ORG: none

TITLE: Investigation of the influence of extraneous impurities on the concentration of thallium atoms in the metastable state

SOURCE: Optika i spektroskopiya, v. 20, no. 4, 1966, 554-560

TOPIC TAGS: thallium, metastable state, crystal impurity, collision cross section, inelastic scattering, *atom*, *absorption coefficient*

ABSTRACT: The authors have investigated experimentally the influence of different impurities on the concentration of thallium atoms in a metastable state $6P_{3/2}$. These atoms were obtained by photodissociation of TlI molecules, making it possible to vary extensively the nature of the extraneous gases and their pressure. The impurities were molecular hydrogen, oxygen, and ammonia at different pressures. The concentration of the metastable atoms was determined by measuring the integral coefficient of absorption of the Tl atoms produced during the photodissociation. The photodissociation was produced in TlI vapor at a temperature 460C and a pressure 2-3 Torr by the absorption of ultraviolet from a mercury lamp. Light from a

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UDC: 539.186.3: 546.683

L 31505-66

ACC NR: AP6013017

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thallium lamp, together with thallium emission from the Tl atoms in TlI vapor, was incident on a monochromator slit, and measured with a photoelectric attachment (FEP-1). The widths and shapes of the spectral lines were measured by photographing the spectra obtained with the aid of a Fabry-Perot interferometer, using an ordinary photometry technique. The data reduction procedure is described. The results show that the concentration of the metastable Tl atoms decreases with increasing pressure of the extraneous gas. Ammonia and oxygen decreased the concentration of the Tl atoms at the metastable level with approximately equal efficiency, whereas the hydrogen was much less effective. The measurements yield for the cross sections for inelastic collisions values of the order of 10^{-16} cm² for ammonia and oxygen, and 10^{-18} - 10^{-19} cm² for hydrogen. The authors thank the late P. A. Bazhulin and S. G. Rautian for continuous interest in the work and valuable advice. Orig. art. has: 3 figures, 8 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 27 Nov 64/ ORIG REF: 004

Card 2/2mc

E 21555-66 EWT(d)/EWT(1)/EWP(m)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(k)/EWA(h)/
 ACC NR: AP6009060 SOURCE CODE: UR/0207/66/000/001/0123/0124
 ETC(m)-6/EWA(1) IJP(c) IG/WW/EM
 AUTHOR: Gol'dshtik, M. A. (Novosibirsk); Sorokin, V. N. (Novosibirsk)

ORG: none

TITLE: Rotation of a cylinder at the edge of a flow

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1966, 123-124

TOPIC TAGS: air flow, liquid flow, flow research, rotation

ABSTRACT: Experiments were conducted in which ebonite cylinders 3.5, 7, and 10 mm in diameter were introduced into 10-, 30-, and 60-mm axisymmetric flows and 10 x 50-, 20 x 152-, and 152 x 250-mm plane flows of air and water, respectively. Reynolds numbers for air flow ranged between 10^4 and $4 \cdot 10^5$, and for water $Re = 1.5 \cdot 10^3 - 5 \cdot 10^4$. Corresponding Reynolds numbers for the cylinders were $10^3 - 4 \cdot 10^4$ and $10^3 - 3 \cdot 10^4$. In the experiments, a cylinder capable of rotating about a fixed, low-friction axis was introduced laterally into the flow. As the cylinder entered the flow, its rotation was clockwise and increased to a maximum as it moved inwards; this rate dropped to zero as the axis of the cylinder coincided with the edge of the flow. Further penetration into the flow resulted in a counterclockwise motion, the attainment of a maximum rotation rate, and the eventual stopping of rotation. By varying flow dimensions, it was learned that cylinder rotation against the basic flow circulation is a local effect occurring at the edge of any flow whose size [sic] exceeds the radius of the

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ACC NR: AP6009060

cylinder. It was also learned that the change of rotation also holds true for spheres. Two graphs in the article serve to illustrate the phenomenon and various parameter relationships. It is stated that there is as yet no theoretical explanation for the observed phenomenon. Orig. art. has: 2 figures. [LB]

SUB CODE: 20/ SUBM DATE: 23Mar65/ ATD PRESS: 4319

Card

2/2

BIG

L 5451-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD
ACCESSION NR: AP5019751 UR/0051/65/019/002/0177/0180
539.196.3 94
44.55 73
AUTHOR: Dudkin, V. A.; Andreyeva, T. L.; Malyshev, V. I.; Sorokin, V. N. 41, 55 B
TITLE: Broadening of emission lines of thallium by molecular hydrogen
SOURCE: Optika i spektroskopiya, v. 19, no. 2, 1965, 177-180
TOPIC TAGS: thallium, emission line, line broadening, hydrogen, pressure effect
ABSTRACT: The broadening of the 5350 and 3776 Å emission lines of thallium by molecular hydrogen was investigated using thallium atoms excited by photodissociation of Tl-I molecules. The procedure was to irradiate a quartz cell containing the gas by means of an external source (PRK-2 mercury lamp), and to measure the width of the excited-atom lines as a function of the pressure and of the type of gas. A diagram of the experimental setup is shown in Fig. 1 of the enclosure. The hydrogen pressures ranged from 0 to 720 mm Hg. The photodissociation was excited as a result of absorption of the 2002, 1972, and 1942 Å mercury lines by the Tl-I molecules. The Tl-atom fluorescence spectra were obtained with an ISP-28 spectrograph crossed with a Fabry-Perot etalon. The 5350 and 3776 Å line profiles were determined by photographic photometry. A linear variation of the width of both lines approximately from 0.1 to 0.75 cm⁻¹ was observed on changing the hydrogen

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L 5451-66

ACCESSION NR: AP5019751

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pressure from 0 to 720 mm Hg. The broadening of the cross section, due to elastic collision of the thallium atoms with the hydrogen molecules, was found to be 10^{-14} cm², which does not differ much from the values obtained for collisions between alkaline metals and molecular hydrogen. "We thank R. A. Bazhulin, S. G. Rautian, and I. I. Sobel'man for useful discussions and advice, and I. S. Marshak and his co-workers D. A. Goukhberg and G. N. Semanova of the Moskovskiy elektrolampovyy zavod (Moscow Electric Bulb Plant) for preparing the lamps." Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 11Jun64

NR REF SOV: 009

ENCL: 01

OTHER: 002

SUE CODE: OP, NP

Card 2/3

L 5451-66
ACCESSION NR: AP5019751

ENCLOSURE: 01

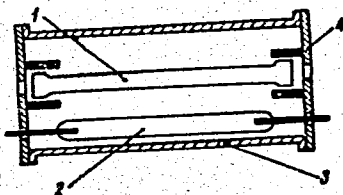


Fig. 1. Diagram of experimental setup.

1 - Cell, 2 - exciting source, 3 - housing,
4 - heated holders.

Card 3/3 *hd*

L 24284-66 EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6007007

SOURCE CODE: UR/0051/66/020/002/0333/0334

AUTHOR: Andreyeva, T. L.; Dudkin, V. A.; Malyshev, V. I.; Sorokin, V. N. 44

ORG: none 42

TITLE: The excitation of thallium atoms by interaction with ammonia molecules B

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 333-334

TOPIC TAGS: thallium, ammonia, light emission, spectral line, light excitation, fluorescence

ABSTRACT: This is a continuation of an earlier investigation (Opt. i spektr. v. 19, 177, 1965) of the effect of impurities on the intensity and width of thallium atomic emission lines, where it was observed that addition of ammonia greatly increases the intensity of the 3519 Å line, corresponding to the $^6D_{5/2} + ^6P_{3/2}$ transition, without affecting the intensity of the other lines. To clarify this phenomenon further, the authors investigated the emission spectrum of atomic thallium in the presence of ammonia molecules when irradiated by a mercury lamp. The results have shown that the selective excitation of the $^6D_{5/2}$ level of thallium depends on the interaction of the excited ammonia molecule with a thallium atom, and is not related to the presence of TII molecules. An analysis of various possible mechanisms for the selective excitation of the $^6D_{5/2}$ atomic-thallium level, aimed at explaining the observed phenomena, shows that the mechanism of sensitized fluorescence with transfer of excitation energy from the ammonia molecules to the thallium atoms comes closest to satisfying

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UDC: 539.196.3 2

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ACC NR: AP6007007

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the requirement that the excited thallium atom concentration be linearly dependent on the excitation source power. Although in principal excitation processes with transfer energy from a molecule to an atom are possible, none have been observed as yet. The authors therefore suggest also a one-quantum process which could lead to the formation of excited thallium atoms, namely photodissociation of the hydride molecule $\text{TiH}(\text{Ti} + h\nu \rightarrow \text{Ti}^* + \text{H})_3$ and of the quasi-molecule TiNH_3 which results from the chemical interaction of thallium with hydrogen or with ammonia respectively. Although the observed decrease in the amount of ammonia in the thallium cell under irradiation by a mercury lamp may indicate that a chemical interaction occurs between the thallium atoms and the ammonia molecules, the experiments show that the same occurs for pure ammonia. It is therefore deduced that the experiments confirm the hypothesis that the principal atomic excitation is due in this case to sensitized fluorescence, with transfer of excitation from the ammonia molecule to the thallium atom. The authors thank P. A. Bazhulin for discussing the results and A. N. Terenin for valuable suggestions. Orig. art. has: 1 figure and 1 formula.

SUB CODE: 20/ SUBM DATE: 10Apr65/ ORIG REF: 003/ OTH REF: 002

Card 2/2 FV

L 36050-66 EWT(1) GW
ACC NR: AR6014194

SOURCE CODE: UR/0271/65/000/011/2014/B015

AUTHOR: Sorokin, V. N.; Vashkevich, N. P.

TITLE: Some problems in the evaluation of external-access write-read ferrite storage devices

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika, Abs. 11B123

REF SOURCE: Uch. zap. Penzensk, politekhn. in-t, vyp. 1, 1964, 3-16

TOPIC TAGS: computer, computer storage device, *FERRITE CORE MEMORY*

ABSTRACT: The operation of a square-loop-ferrite storage element¹⁶⁰ is investigated; two or more cores linked together are required for each binary digit. The core operation is described by a system of equations, and formulas are given for turnover currents, which allow for the turnover-current front-rise time. These formulas permit evaluating the effect of core parameters and link resistance on the speed of operation. Various modifications of the write-read systems are compared by the complexity of their control circuits, the number of exciting devices for number-link access, by their rates and the requirements of exciting fields under write-read conditions. The results of analysis are tabulated. Ten figures. One table. Bibliography of 5 titles. G. G. [Translation of abstract]

SUB CODE: 09

Card 1/1 vmb

UDC: 681.142.652.2

L 35926-66 EWT(d)/ENT(m)/EWP(c)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(l) IJP(c) JD/HM/WB

ACC NR: AP6015106

SOURCE CODE: UR/0135/66/000/005/0028/0030

AUTHOR: Baranov, A. K. (Engineer); Sorokin, V. N. (Engineer)

ORG: none

TITLE: Argon arc welding of Kh14G14N3T steel

SOURCE: Svarochnoye proizvodstvo, no. 5, 1966, 28-30

TOPIC TAGS: corrosion resistant steel, intercrystalline corrosion, impact test, bend test, tensile test, arc welding, welding equipment / EI711 steel, Kh14G14N3T steel, Kh18N9T steel, 06Kh19N9T wire

ABSTRACT: The results of tensile, bend, impact and intercrystalline corrosion tests on welded Kh14G14N3T steel are presented. The chemical composition of the steel is 0.1% C; 14.43% Mn; 0.56% Si; 2.96% Ni; 14.40% Cr; 0.009% S; 0.028 % P; 0.48% Ti; and the remainder Fe. Kh14G14N3T (also designated as EI711) is recommended as a substitute for Kh18N9T steel in the manufacture of equipment exposed to mildly aggressive media (e. g., organic acids of low concentration). EI711 steel is stronger than Kh18N9T steel but is not as resistant to corrosion. EI711 specimens were cleaned with steel brush and pickled in acetone. Single-pass welds were made with a backing argon shield and a nonconsumable electrode. 06Kh19N9T wire, 1 mm in diameter, was used as filler metal. On the basis of x-ray and destructive tests, it is concluded that EI711

UDC: 621.791.753.93:669.15-194

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ACC NR: AP6015106

steel resists hot cracking, has a close grained structure, and is uniformly hard throughout. The arc was stable and there was good penetration in all cases; no surface defects were noticed. X-rays failed to reveal porosities, cracks, etc. The authors recommend the use of filler metal for thicknesses of 2.5 mm and 3 mm - preclude destruction of the base metal at points 15-20 mm distances from the weld axis. The A-GOST 6032-58 test failed to detect any evidence of intercrystalline corrosion. A table lists the mechanical properties of argon arc welded joints of EI711 steel. Orig. art. has: 4 figures, 2 tables.

SUB CODE: 13,11/

SUBM DATE: none/

ORIG REF: 002

Card 2/2

SL 36051-66 INT(1) GW

ACC NR: AR6014194

SOURCE CODE: UR/0271/65/000/011/B014/B015

AUTHOR: Sorokin, V. N.; Vashkevich, N. P.

TITLE: Some problems in the evaluation of external-access write-read ferrite storage devices

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika, Abs. 11B123

REF SOURCE: Uch. zap. Penzensk, politekhn. in-t, vyp. 1, 1964, 3-16

TOPIC TAGS: computer, computer storage device, *FERRITE CORE MEMORY*

ABSTRACT: The operation of a square-loop-ferrite storage element¹⁶⁰ is investigated; two or more cores linked together are required for each binary digit. The core operation is described by a system of equations, and formulas are given for turnover currents, which allow for the turnover-current front-rise time. These formulas permit evaluating the effect of core parameters and link resistance on the speed of operation. Various modifications of the write-read systems are compared by the complexity of their control circuits, the number of exciting devices for number-link access, by their rates and the requirements of exciting fields under write-read conditions. The results of analysis are tabulated. Ten figures. One table. Bibliography of 5 titles. G. G. [Translation of abstract]

SUB CODE: 09

Card 1/1 vmb

UDC: 681.142.652.2

1 00193-00 001(0)/001(1) 101(0) 001(0)

ACC NR: AT6024280

SOURCE CODE: UR/2976/66/000/005/0051/0057

AUTHOR: Sorokin, V. N.; Vashkevich, N. P.

ORG: none

TITLE: Ferrite-core file memory 160

SOURCE: Moscow. Vyssheye tekhnicheskoye uchilishche. Vychislitel'naya tekhnika, no. 5, 1966, 51-57

TOPIC TAGS: ferrite core, ferrite core memory, data processing system/PEV-2 ferrite-core coupling wire, K-260 ferrite core, VT-5 ferrite core

ABSTRACT: A highly reliable transistorized two-cores-per-bit file memory designed to operate in data processing control systems is described. It consists of: a ferrite-core stack serving as the accumulator store; two address registers; a sampling circuit; a circuit for generating sampling-current pulses; write drivers serving to shape powerful current pulses during data recording; an output signal amplifier; input and output registers; an overwriting circuit; and the operating-cycle control circuit. There are two cores per bit: a memory core (K-260 ferrite core, 2x1.4x0.8) and a switch core (VT-5 ferrite core, 3x2x1.4). The maximum

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ACC NR: AT6024280

switch time of any core does not exceed 4 msec. The coupling loop in the memory cell is made of PEV-2 wire 0.06 mm thick and about 10 mm in length and so its resistance is ~ 0.1 ohm; this has made it possible to markedly reduce the dimensions of the ferrite-core stack. The memory device is powered from a 24 v source. The power requirement of the entire device is ~ 100 w. Dimensions of the device: 700x470x170 [mm]. A model of this file memory was found to perform satisfactorily in the temperature range of from -10 to $+50^{\circ}\text{C}$ (range permitted by the possibilities of semiconductor triodes) as well as with deviation of supply voltage by $\pm 15\%$ from rated voltage. The access-signal frequency may vary from 0 to 10 kilo-cps and the number access time is ~ 75 μsec . Total memory capacity: 3434 bits (462x7). Minimum signal/noise ratio is 20. Orig. art. has: 4 figures. [16]

SUB CODE: 09,20 /SUBM DATE: none/ ORIG REF: 002

Card

2/2

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SOROKIN, V.O., red.; KORKHOVA, Kh.N., red.; GRIBAKIN, D.V.,
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crossings; traffic diagrams] Posobie dlia izucheniia pravil
proezda perekrestkov; skhemy dvizheniia. Pod red. V.O.So-
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spektsiia UVD Lenoblgorispolkomov, 1961. 103 p.

(MIRA 15:7)

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2. USSR (600)
4. Agriculture
7. Work practice for the "put' k kommunizmy" Collective Farm. Dost. sel'khoz.
no. 6, 1952

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

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1. Predsedatel' kolkhoza "Put' k kommunizmu", Timashevskogo rayona, Krasnodarskogo kraya (for Sorokin); 2. Starshiy agronom kolkhoza imeni Molotova, togo zhe rayona (for Kochetkov).
(Kuban--Agriculture)

SOROKIN, V.P.

Biology of reproduction of the rosefishes *Sebastes marinus* L. and
Sebastes mentalla Travin in the Barents and Norwegian seas. Trudy
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1. Polyarnyy nauchno-issledovatel'skiy institut morskogo rybnogo
khozyaystva i okeanografii.
(Barents Sea--Rosefish (*Sebastes*))
(Norwegian Sea--Rosefish (*Sebastes*)) (Reproduction)

KONSTANTINOV, K.G.; SOROKIN, V.P.

Common European eel in the Kola Gulf. Zool.zhur. 39 no.4:621 Ap
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1. Laboratory of Bottom Fishes, Polar Research Institute of Marine
Fishery Managment and Oceanography, Murmansk.
(Kola Gulf--Eels)

LYUTS, Aleksandr Fedorovich, prof.; SOROKIN, Vasilii Pavlovich, dots.;
FINKOVSKAYA, Tamara Semenovna, dots.; KOKOVIKHIN, Mikhail
Fedorovich, inzh.; KIRILENKO, Vasilii Sergeyevich, kand. tekhn.
nauk; BELIKOV, Ye.F., dots., retsenzent; KHVOSTIK, I.F., red.;
KOMAR'KOVA, L.M., red.izd-va; SUNGUROV, V.S., tekhn. red.

[Surveying in railroad engineering] Geodeziia v zheleznodorozh-
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Gecdezizdat, 1962. 342 p. (MIRA 16:1)
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putevom khoziaistve. Moskva, Gos.transp. zhel-dor.izd-vo,
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SOROKIN, V.P., kand. tekhn. nauk, dotsent

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surveying. Trudy NIIZHT 26:87-105 '62. (MIRA 16:8)

(Railroads---Surveying)

SOROKIN, V.P., kand.tekhn.nauk, dotsent

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work in our country. Trudy NIIZHT no.30:3-15 '62.
(MIRA 16:9)

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S/078/63/008/001/008/026
B119/B186

11.2222

AUTHORS: Sorokin, V. P., Vesnina, B. I., Klimova, N. S.

TITLE: New method of synthesizing ammine borine, and its properties

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 1, 1963, 66 - 68

TEXT: Ammine borine was synthesized by reaction between NH_3 and B_2H_6 in polar solvents according to $\text{B}_2\text{H}_6 + 2\text{NH}_3 = 2\text{NH}_3\text{BH}_3$. The pure gases B_2H_6 and NH_3 were introduced at room temperature into the solvent (ether, dioxane, or water) saturated with NH_3 , continuously stirred for 3 - 4 hrs. Water proved effective as a reaction medium. NH_3BH_3 is crystalline and has an orthorhombic, face-centered lattice with the parameters: $a = 7.22$; $b = 7.38$; and $c = 5.23 \text{ \AA}$. The density of NH_3BH_3 briquets compressed at 2000 - 5000 kg/cm^3 is 0.73 g/cm^3 (density calculated from the parameters: 0.74 g/cm^3). The melting point is $104.5 \pm 0.5^\circ\text{C}$. The solubility of NH_3BH_3 , expressed in g/100 ml, is 33.6 in water, 6.5 in alcohol, 0.76 in ether, X
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New method of synthesizing...

S/078/63/008/001/008/026
B119/B186

0.5 in dioxane, 0.04 in benzene, 0.03 in toluene, and 0.02 in carbon tetrachloride. In aqueous solution NH_3BH_3 is comparatively stable; in ~ 2.5% solution, 0.5 - 0.9% of the NH_3BH_3 is hydrolytically split after 24 hrs standing at room temperature. NH_3BH_3 can reduce gold, palladium, silver and copper, but also iron and nickel, from the solutions of their salts to the metallic state. Solid NH_3BH_3 splits off hydrogen on heating: 1.5% at 50°C, 10 - 20% at 75°C after 6 hrs, about 33% at ~105°C, ~50% at 150°C, and 60 - 70% at 300°C. At 500°C and over, the hydrogen is completely split off, and BN is formed. There are 1 figure and 1 table. The English-language references are: S. J. Shore, R. W. Parry. J. Amer. Chem. Soc., 77, 6084 (1955); S. J. Shore, R. W. Parry. J. Amer. Chem. Soc., 80, 1, 8 (1958).

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SUBMITTED: June 23, 1961

Card 2/2

ACCESSION NR: AP4012185

S/0191/64/000/002/0017/0019

AUTHORS: Omel'chenko, S. I.; Sorokin, V. P.; Tkachuk, B. M.;
Beletskaya, T. V.; Zubkova, Z. A.; Piotrkovskaya, V. G.;
Safonov, A. I.

TITLE: Unsaturated polyglycol maleinate resins modified by anthracene

SOURCE: Plasticheskiye massy*, no. 2, 1964, 17-19

TOPIC TAGS: unsaturated polyglycol maleinate resin, anthracene,
unsaturated polyester resin, glass-reinforced plastic, maleic an-
hydride, contact method, filler, binder, heat resistance

ABSTRACT: Effort directed toward broadening the raw material base
for synthesis of unsaturated polyester resins is acquiring great
value in connection with the expansion of glass-reinforced plastic
production. Unsaturated polyester resins were synthesized by two
methods: (1) joint polycondensation of maleic anhydride with additive
of anthracene and glycol (ethylene glycol or diethylene glycol).
(2) introduction of anthracene during condensation polymerization of
glycols and maleic anhydride. Two problems were simultaneously

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